

# MANUFACTURING EXTENSION PARTNERSHIP

## Success Stories from the Field

### Varian Semiconductor Associates Inc

#### Massachusetts Manufacturing Extension Partnership

#### Varian Semiconductor Collaborates For Continuous Improvement

##### Client Profile:

Varian Semiconductor Equipment Associates, Inc. is a 50 year-old company that designs, manufacturers, and services semiconductor processing equipment used in the fabrication of integrated circuits. Varian Semiconductor systems implant more than 5 million wafers each and every day--more than all of its competitors combined. The company employs an estimated 400 employees in its Gloucester and Newburyport, Massachusetts facilities.

##### Situation:

Varian Semiconductor Equipment Associates (Varian) was one of five companies, each a member of the Boston Area Semiconductor Equipment Council, to participate in a Collaborative Continuous Improvement Training program subsidized by a Massachusetts Work Force Training Fund grant. Each company sent a team of up to eight members to collaborative workshops designed to introduce and implement lean manufacturing improvements at their respective companies. The Massachusetts Manufacturing Extension Partnership (MassMEP), a NIST MEP network affiliate, conducted these training workshops.

##### Solution:

As part of MassMEP's workshops, each company selected a real-world problem encountered on its shop floor. Each company participated in a value stream mapping exercise to identify the causes of these problems and envision an ideal future state. The Varian team, working with MassMEP, decided to focus on its High Voltage Generator cell. With a build time of 17-19 hours, Varian's primary objective focused on eliminating delays and distractions. Part of Varian's delays lay in poorly organized and stored parts, incomplete sets of tools, inefficient cell layout, and inventory levels in excess of \$165,000. MassMEP led the team through 5S (workplace organization) and cell design kaizen events to begin implementing its vision. The team relocated all the necessary parts to the cell in which they are used, and made an investment in tools to complete all the sets. Next, MassMEP recommended reconfiguring the cell to put its operators closer together, thereby reducing required space, minimizing the walking distance within the cell, and increasing overall productivity as a result.

Building on the knowledge and skills learned at the MassMEP-led Collaborative Continuous Improvement Training program, Varian went on to reconfigure other cells within the plant, reduce inventory levels, and further improve

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productivity through lean manufacturing techniques.

### **Results:**

Reduced build time to 13 hours 6 minutes, a 4 to 6 hour improvement.

Reduced High Voltage Generator cell's required space by 13 percent.

Reduced walking distance within High Voltage Generator cell by 38 percent.

Reduced another cell's required space by 33 percent.

Reduced walking distance within that cell by 75 percent.

Decreased inventory in the cell from \$162,000 to \$93,000, a reduction of 43 percent.

### **Testimonial:**

"The lean training with the Massachusetts Manufacturing Extension Partnership has provided an excellent foundation for the implementation of the lean philosophy throughout the company. Due to the systematic and repeatable approach, we have been able to begin the work of implementing simple process improvements in the rest of the factory. We have identified at Varian that implementation of the lean principles will help us to reach our strategic goals which have otherwise been unattainable."

Bill Monroe, Product Line Materials Manager